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PULSE-LINK, INC.
1969 KELLOGG AVENUE
CARLSBAD, CA 92008

EXAMINER	
VO, NGUYEN THANH	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN SANTHOFF, STEVEN A. MOORE,
and BRUCE W. WATKIN

Appeal 2008-1413
Application 10/719,903
Technology Center 2600

Decided: August 11, 2008

Before JOHN C. MARTIN, MARK NAGUMO, and SCOTT R. BOALICK, *Administrative Patent Judges.*

MARTIN, *Administrative Patent Judge.*

DECISION ON APPEAL

1
2 STATEMENT OF THE CASE

3 This is an appeal under 35 U.S.C. § 134(a) from the Examiner's
4 rejection of claims 1-25 under 35 U.S.C. § 103(a).

5 We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE and enter a NEW GROUND OF REJECTION.

A. Appellants' invention

Appellants' invention provides a system, methods, and apparatus that can communicate between, or "bridge," different communications technologies (Specification 5:19-20). More particularly, the invention involves bridging between UWB (ultra-wideband) technology and conventional, narrowband radio frequency (RF) technology.[1] The Specification explains that "conventional radio frequency technology, sometimes referred to herein as 'narrowband,' or 'narrowband radio frequency communication,' employs continuous sine waves that are transmitted with data embedded in the modulation of the sine waves' amplitude or frequency" (Specification 6:17-20).

The Specification discusses several forms of UWB communication. One form is "carrier free" and thus does not require the use of high frequency carrier generation hardware, carrier modulation hardware, stabilizers, frequency and phase discrimination hardware or other devices employed in conventional frequency domain communication systems (Specification 6:14-17). This form of UWB communication technology

[1] For a discussion of UWB technology, Appellants rely (Reply Br. 3) on the following articles, which form Appendix B to the Brief: (a) Bruno Pattan, *A Brief Exposure to Ultra-Wideband Signaling*, reprinted from
(Continued on next page.)

> employs discrete pulses of electromagnetic energy that are emitted at, for example, nanosecond or picosecond intervals (generally tens of picoseconds to a few nanoseconds in duration). For this reason, ultra-wideband is often called "impulse radio." That is, the UWB pulses are transmitted without modulation onto a sine wave carrier frequency, in contrast with conventional, narrowband radio frequency technology as described above. A UWB pulse is a single electromagnetic burst of energy. A UWB pulse can be either a single positive burst of electromagnetic energy, or a single negative burst of electromagnetic energy, or a single burst of electromagnetic energy with a predefined phase.

Specification 7:7-15. "Alternate implementations of UWB can be achieved by mixing discrete pulses with a carrier wave that controls a center frequency of a resulting UWB signal." *Id.* at 7:15-16.

Appellants' Figure 1 is reproduced below:

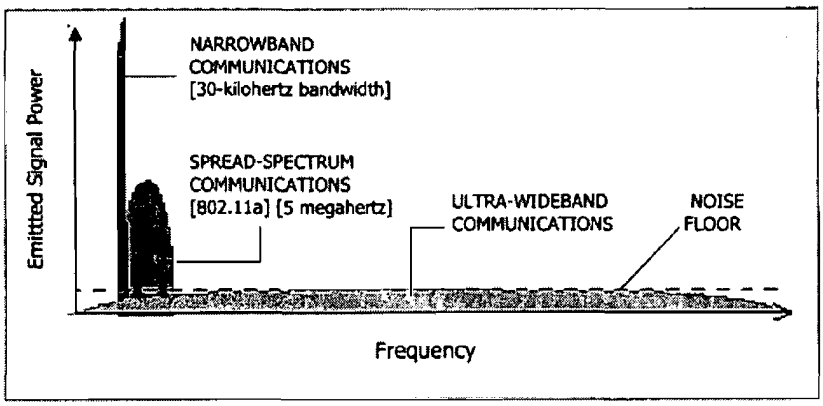

FIG. 1

Microwave Journal (Dec. 2003); and (b) David G. Leeper, *Wireless Data Blaster*, Scientific American, pp. 64-69 (May 2002).

Figure 1 is a graph depicting the frequency spectra of various communication methods, including narrowband communications and UWB communications (*id.* at 3:10).

In contrast to the relatively narrow frequency spread of conventional communication technologies, a UWB pulse may have a 2.0 GHz center frequency, with a frequency spread of approximately 4 GHz, as shown in Figure 2 (not reproduced below), which illustrates two typical UWB pulses (*id.* at 7:18-20). Figure 2 shows that the narrower the UWB pulse in time, the broader the spread of its frequency spectrum (*id.* at 7:20-22).

Figures 4-15 show apparatus for converting signals from a UWB format to various continuous carrier wave formats and vice-versa (*id.* at 3:13-4:18).

Appellants' Figure 4 is reproduced below.

FIG. 4

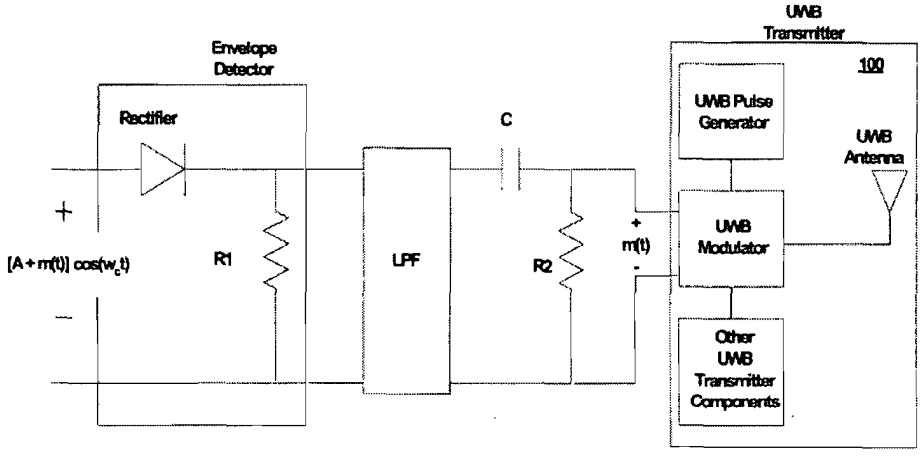

Figure 4 illustrates the demodulation of a conventional, narrowband amplitude-modulated signal and re-transmission using a UWB communication format (*Id.* at 3:13-14).

Referring to Figure 4, a continuous AM waveform $[A+m(t)] \cos(\omega_c t)$ arrives at the envelope detector comprised of a rectifier circuit, a resistive element R1, and any other suitable components, or their equivalents (*id.* at 23:1-3). The envelope detector's output is filtered by lowpass filter LPF (*id.* at 23:3-4). Capacitive element C blocks residual DC present in the signal and the recovered data signal m(t) is sent to the UWB transmitter 100, which may comprise a UWB modulator, a pulse generator, and other UWB transmitter components, such as amplifiers, bandpass filters, and transmit/receive switches (*id.* at 23:4-7).

B. The claims

Claim 1, the sole independent claim and the only claim specifically argued by Appellants, reads:

> 1. A communication system comprising:
>
> a receiver structured to receive a substantially continuous sine wave carrier signal, the signal modulated to contain communication data;
>
> a demodulator communicating with the receiver, the demodulator structured to demodulate the communication data from the substantially continuous sine wave carrier signal; and

> a transmitter coupled to the demodulator, the transmitter structured to transmit a plurality of electromagnetic pulses, with the pulses configured to include the communication data.

Br. 8, Claims App.

C. The references and rejection

The Examiner relies on the following references:

Fischer et al. (Fischer)	US 6,360,075 B1	Mar. 19, 2002
Izadpanah et al. (Izadpanah)	US 6,515,622 B1	Feb. 4, 2003

Claims 1-25 stand rejected under 35 U.S.C. § 103(a) for obviousness over Fischer in view of Izadpanah.

A new ground of rejection is entered *infra* based on the following reference, not previously of record:[2]

McCorkle et al. (McCorkle)	US 7,177,341 B2	Feb. 13, 2007 (filed Oct. 10, 2001)

THE ISSUE

The issue is whether Appellants have shown reversible error by the Examiner in maintaining the rejection. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of

[2] A form PTO-892 listing this patent is enclosed with this decision.

nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)). More particularly, the issue is whether Appellants have shown that the Examiner's prima facie case for combining the teachings of the references is based on reversible error.

ANALYSIS

A. Principles of law

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). A rejection under 35 U.S.C. § 103(a) must be based on the following factual determinations: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) any objective indicia of non-obviousness. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966)).

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (quoting *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1739 (2007)). Discussing the obviousness of claimed combinations of elements of prior art, *KSR* explains:

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of

> ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [*v. AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock*[*, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740. If the claimed subject matter "involve[s] more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement," *Id.*,

> it will be necessary . . . to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.

Id. at 1740-41. "To facilitate review, this analysis should be made explicit." *Id.* at 1741. That is, "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). *See also PharmaStem Therapeutics Inc. v. Viacell Inc.*, 491 F3d 1342, 1360 (Fed. Cir. 2007) (proponent of obviousness based on combination of references must

show "that a person of ordinary skill in the art would have had reason to attempt to make the composition or device, or carry out the claimed process, and would have had a reasonable expectation of success in doing so.") (citations omitted).

The motivation for combining reference teachings is not limited to the problem the patentee was trying to solve: "any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *In re Icon Health and Fitness Inc.*, 496 F.3d 1374, 1380 (Fed. Cir. 2007) (quoting *KSR*, 127 S. Ct. at 1742).

The motivation to combine or modify reference teachings can be based on common knowledge or common sense rather coming from the references themselves. "[T]he [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 127 S. Ct. at 1741.

Furthermore, a reference may be understood by the artisan to be suggesting a solution to a problem that the reference does not discuss. *See KSR*, 127 S. Ct. at 1742 ("The second error of the Court of Appeals lay in its assumption that a person of ordinary skill attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem. . . . Common sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill

will be able to fit the teachings of multiple patents together like pieces of a puzzle. . . . A person of ordinary skill is also a person of ordinary creativity, not an automaton.").

B. The merits of the Examiner's rejection

Fischer discloses an improvement to a prior-art "wireless cable" system that transmits microwave signals to subscribers from a central transmitter (Fischer, col. 1, ll. 48-50). Each subscriber receives the signals with a microwave antenna that is placed on the roof-top of the subscriber's premises and aimed at the central transmitter (*id.*, col. 1, ll. 50-53). Fischer's invention is directed to the following problems with the prior-art system:

> A main drawback to the wireless cable systems is that there is a limited frequency spectrum that is available. Further, consumers desire to have access to interactive services over this pipeline. Some wireless cable systems have dabbled with providing two-way communication over their wireless cable systems. However, developers are left with the task of increasing the capacity of this pipeline by more efficiently using the limited spectrum that is available.

Id., col. 1, ll. 54-61. Thus, Fischer's objective is to provide "a transmission system that efficiently uses the assigned spectrum and allows for bidirectional communication" (*id.*, col. 1, ll. 65-67).

Figure 1 of Fischer is reproduced below.

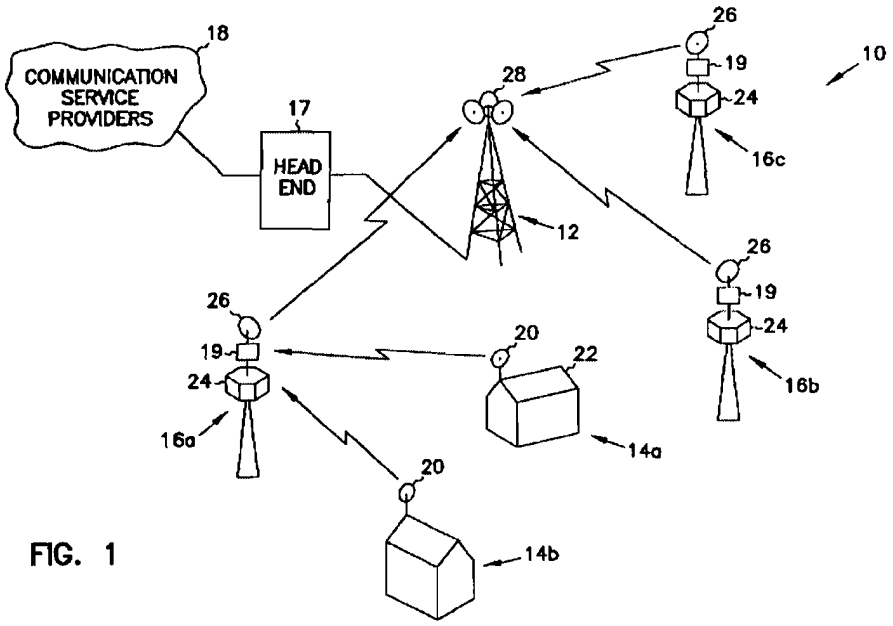

FIG. 1

Figure 1 is a representational diagram of an illustrative embodiment of Fischer's transmission system (*id.*, col. 3, ll. 11-13).

Transmission system 10 in Figure 1 provides bi-directional transmission of data between the communication service providers 18 and the subscribers (e.g., 14a and 14b) via a head end 17, a central hub or transceiver 12, and a plurality of repeaters 16a-16c (*id.*, col. 3, ll. 11-44). Fischer does not indicate that repeaters were used in the prior-art "wireless cable" system.

The transmission system transmits digital data using the portions of the frequency spectrum currently licensed in the United States for analog multichannel multipoint distribution systems (MMDS), multipoint distribution systems (MDS), and instructional television fixed services (ITFS), as shown in Figure 3 (not reproduced below) (*id.*, col. 3, ll. 53-58).

Specifically, the transmission system uses the two MDS channels for upstream communication and the thirty-one MMDS and ITFS channels for down stream communication (*id.*, col. 3, ll. 59-61). All of these channels are specified as standard 6 MHz video channels as used in conventional analog video transmission (*id.*, col. 3, ll. 61-63). The two upstream channels occupy the spectrum between 2.15 and 2.16 GHz and the downstream channels occupy the spectrum between 2.5 and 2.69 GHz (*id.*, col. 3, ll. 63-66).

Digital repeaters 16 are spatially distributed in a geographic region to form a cellular-type layout (*id.*, col. 3, ll. 45-46). As explained below, use of a cellular approach allows frequency re-use to increase the spectrum efficiency of transmission system 10 (*id.*, col. 3, ll. 46-48).

Fischer's Figure 2 is reproduced below.

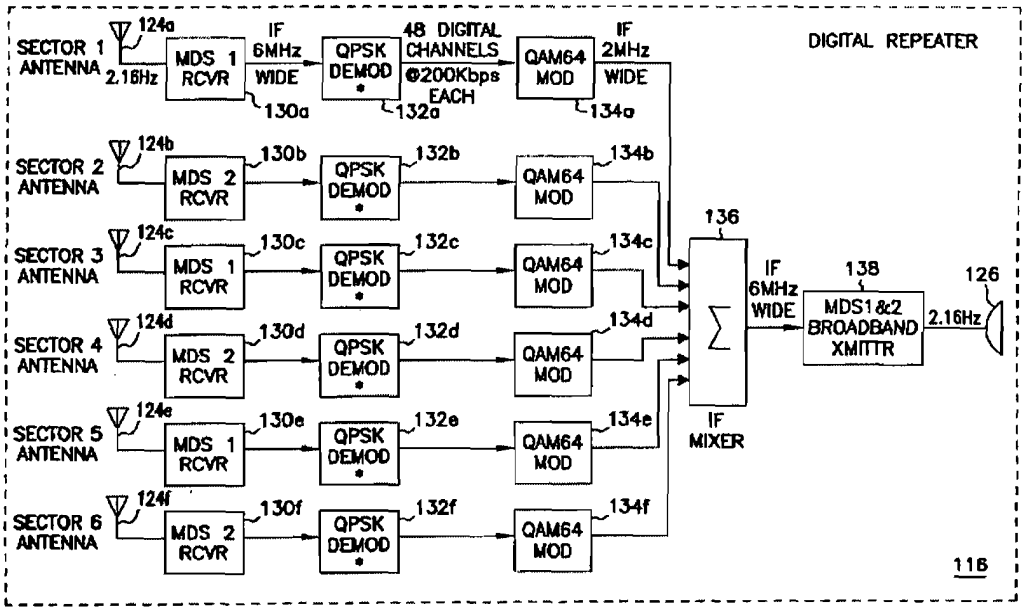

FIG. 2

Figure 2 is a block diagram illustrating an embodiment of the upstream communication portion of a repeater 116 (*id.*, col. 2, ll. 35-37).

The repeater depicted in Figure 2 has six sector antennas 224a-f (*id.*, col. 6, ll. 9-11) for communicating with subscribers located in respective sectors of the cell in which the repeater is located (*id.*, col. 4, ll. 26-29). The "MDS 1" receivers (130a, 130c, and 130e) are tuned to a first 6 MHz MDS channel, while the "MDS 2" receivers (130b, 130d, and 130f) are tuned to a second 6 MHz MDS channel (*id.*, col. 6, ll. 11-14). These receivers are coupled to respective QPSK[3] demodulators 132a-f, which are coupled to

[3] Quadrature phase shift keying (Fischer, col. 5, ll. 13-14).

respective QAM 64[4] modulators 134a-f (*id.*, col. 6, ll. 14-17). The outputs of the QAM 64 modulators are coupled to an IF mixer 136, the output of which is coupled to a broadband transmitter 138 connected to antenna 126 (*id.*, col. 6, ll. 17-20) for transmission to central hub 12 (*id.*, col. 5, ll. 63-64).

The reason for using QPSK demodulators in combination with QAM modulators in repeaters 116 is to "change[] the modulation of the signals so as to efficiently use the electromagnetic spectrum reserved for upstream communications" (*id.*, col. 6, ll. 21-24). More particularly,

> [s]ince each MDS 6 MHz channel is used by three sectors in this embodiment, transmission system 10 uses a different modulation technique to transmit between digital repeaters 16 and central hub 12. This allows the same two MDS 6 MHz channels to be re-used and carry up to three times the information as the MDS channels carried between subscribers 14 and digital repeaters 16.

Id., col. 5, ll. 31-37. The same two MDS channels are also used for communications from the repeaters to the central hub 12 (*id.*, col. 4, ll. 13-18).

Fischer explains that other modulation techniques can be used in place of the QPSK and QAM 64 techniques so long as they provide adequate frequency re-use among the sectors in the upstream direction (*id.*, col. 12, ll. 38-42).

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[4] Quadrature amplitude modulation (*id.*, col. 5, ll. 39-40).

The Examiner reads the recited "a receiver structured to receive a substantially continuous sine wave carrier signal, the signal modulated to contain communication data" on one of receivers 130a-f and reads the recited "a demodulator communicating with the receiver, the demodulator structured to demodulate the communication data from the substantially continuous sine wave carrier signal" on the corresponding one of QPSK demodulators 132a-f (Answer 3-4). The Examiner reads the recited "transmitter coupled to the demodulator" on the corresponding one of QAM 64 modulators 134a-f (Answer 4) in combination with broadband transmitter 138 (Final Action 7), while conceding that those elements are not "structured to transmit a plurality of electromagnetic pulses, with the pulses configured to include the communication data," as required by claim 1 (Answer 4).

To remedy this deficiency in Fischer, the Examiner relies on Izadpanah, which relates to UWB phased array antennas for radio frequency and optical beam forming (Izadpanah, col. 1, ll. 6-8). As noted by the Examiner (Answer 4), Izadpanah explains that "[s]ome of the advantages of ultra wideband (UWB) systems are: lowered probability of intercept of transmissions; [and] reduced multipath fading and radio frequency interference problems; . . . " (Izadpanah, col. 1, ll. 14-18).[5]

Izadpanah discloses a method and apparatus for forming UWB phased array antenna beams having no beam squint (*id.*, col. 2, ll. 25-27). For beam

[5] The Examiner does not rely on the additional recited advantage of
(Continued on next page.)

squint to be zero, the pulse envelopes emitted from each radiating element must coincide at the receiver, and the carriers (if present) must all be in phase (*id.*, col. 1, ll. 27-30).

Izadpanah's Figure 1 is reproduced below.

FIG. 1

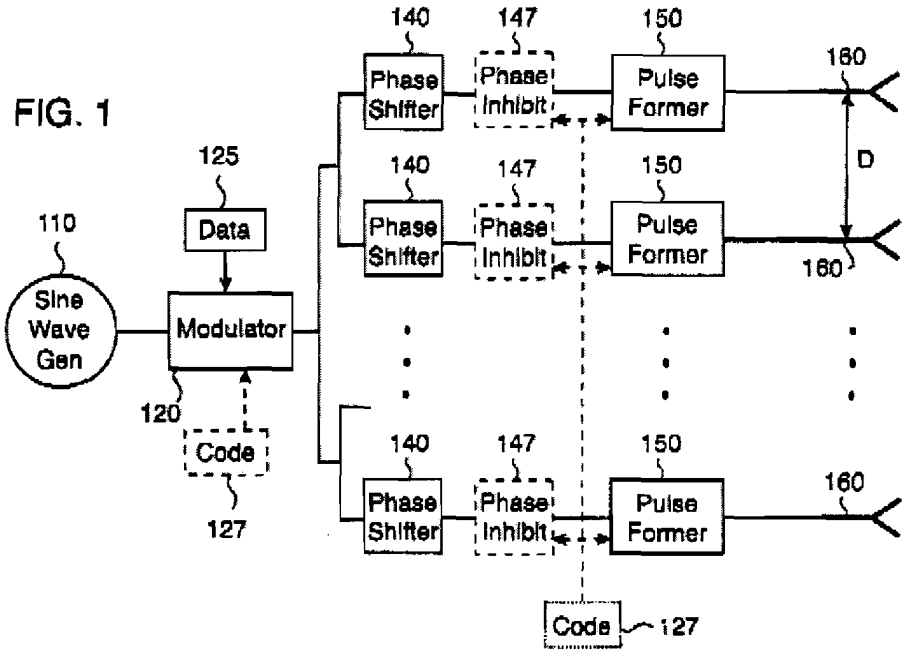

Figure 1 is a simplified schematic of a preferred embodiment of Izadpanah's UWB phased array antenna system (*id.*, col. 3, ll. 34-36; col. 4, ll. 10-11).

As shown in Figure 1, a sine wave generator 110 generates an electrical sine wave at a specific frequency f_p (*id.*, col. 4, ll. 25-26). Data information 125 is provided to a phase shift modulator 120, which provides phase shift key modulation to impress the data information 125 in the form of

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"enhanced target recognition performance" (Izadpanah, col. 1, l. 18).

a phase shift $\Delta\Phi_D$ onto the phase of the sine wave (*id.*, col. 4, ll. 26-30). The phase shift modulated sine wave is then split into N copies and directed into phased output paths containing transmission lines 130, phase shifters 140, pulse formers 150, and radiating elements 160 (*id.*, col. 4, ll. 38-41). Each pulse former 150 contains a non-linear element which converts each half-cycle of the modulated sine wave into a single short pulse where each pulse corresponds to a single unique phase of the sine wave and appears at a unique temporal position (*id.*, col. 5, ll. 8-12).

The Examiner states the rationale for combining the teachings of the references as follows:

> Fischer . . . discloses all the claimed limitations except transmitting a plurality of electromagnetic pulses as recited in the claim. Izadpanah discloses converting continuous sine wave carrier signals (see numeral 110) to a plurality of electromagnetic pulses (see numeral 150), and transmitting the plurality of electromagnetic pulses to another station (see figure 1; column 4 line 10 to column 5 line 29). In addition, Fischer suggests that different modulation techniques can be used in his system (see column 12 lines 38-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Izadpanah to Fischer, because the ultra wideband pulse system has advantages such as lowered probability of intercept of transmission, reduced multipath fading and radio frequency interference problems (as suggested by Izadpanah at column 1 lines 11-18).

Answer 4. In the Final Action, the Examiner also explained that "Fischer at column 12 lines 38-42 does <u>not</u> state that communication technology such as

transmitting a plurality of electromagnetic pulses cannot be used in his system. Therefore, it is clear that Fischer and Izadpanah [are] combinable." Final Action 6.

Because the Examiner reads the claimed "receiver" on one of receivers 130a-f, the "demodulator" on the corresponding one of QPSK demodulators 132a-f, and the "transmitter" on the corresponding one of QAM 64 modulators 134a-f in combination with broadband transmitter 138 (Final Action 2-3 and 7), we understand the Examiner's position to be that it would have been obvious in view of Izadpanah to replace Fischer's QAM 64 modulators 134a-f, IF mixer 136, and broadband transmitter 138, which employ modulated carrier wave technology, with UWB transmitter technology of the type depicted in Izadpanah's Figure 1. Presumably, this modification of Fischer's upstream components would also make it necessary to provide Fischer's central hub 12 with a suitable UWB antenna and receiving circuitry. Fischer's transmission system 10 thus modified would retain the modulated continuous carrier wave communications technology used to handle (1) downstream communications between the central hub and the repeaters and (2) all upstream and downstream communications between the customers and their respective repeaters.

Appellants do not deny that claim 1 reads on Fischer's transmission system thus modified.

We agree with Appellants that the Examiner has failed to make out a prima facie case for the obviousness of modifying Fischer's transmission

system in the above manner so as to employ a combination of continuous carrier wave communication technology and UWB communication technology (Br. 6). To the extent the Examiner's case for obviousness is based on Fischer's disclosure of using "other modulation techniques," the Examiner's position fails to take into account that Fischer calls for using "other modulation techniques . . . in place of the QPSK and QAM 64 techniques *so long as they provide adequate frequency re-use* among the sectors in the upstream direction" (col. 12, ll. 38-42) (emphasis added). The emphasized language makes it clear that the suggestion of using other modulation techniques is limited to other techniques for modulating continuous carrier waves, which would not have been understood as including Izadpanah's UWB communications technology. Appellants are therefore correct to characterize Fischer as "employ[ing] conventional continuous carrier wave communication technology" (Br. 5) and as "completely silent as to any teaching or suggestion to use any other type of communication technology, or to provide a system that can employ two different communication technologies." *Id.*

The Examiner's case for obviousness is also unpersuasive to the extent it is based on Izadpanah's description of the advantages of UWB technology. Regarding the advantage of "lowered probability of intercept of a transmission," Appellants argue that this characteristic is contrary to the purpose of Fischer's "wireless cable" system, which is to ensure that all of the customers are capable of receiving the TV broadcasts (Reply Br. 11). As

secure communication (in either direction) is not a prominent concern of Fischer, we find that the preponderance of the evidence supports Appellants' position against the Examiner's position.

As for the UWB advantages of reduced multipath fading and reduced radio frequency interference, the Examiner has not explained why those advantages would have motivated the artisan to replace only a part of Fischer's system (specifically only QAM 64 modulators 134a-f, IF mixer 136, and broadband transmitter 138 in the repeater) with UWB pulse technology, thereby yielding a hybrid system employing both technologies. Furthermore, modifying Fisher's repeater in this would defeat Fisher's fundamental objective of providing "a transmission system that efficiently uses the assigned spectrum and allows for bidirectional communication" (col. 1, ll. 65-67). *See* MPEP § 2143.01(VI) (8th ed. rev. 6, Sept. 2007) ("If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).").

For the foregoing reasons, the Examiner's rejection of claims 1-25 under 35 U.S.C. § 103(a) for obviousness over Fischer in view of Izadpanah is reversed.

DECISION

The Examiner's decision that the subject matter recited in claims 1-25 is unpatentable under 35 U.S.C. § 103(a) for obviousness over Fischer in view of Izadpanah is reversed.

NEW GROUND OF REJECTION

We are entering the following new ground of rejection pursuant to our authority under 37 C.F.R. § 41.50(b).

Claim 1 is rejected under 35 U.S.C. § 102(e) as inherently anticipated by McCorkle and also under § 103(a) for obviousness over McCorkle in view of Fischer.

McCorkle's invention "relates to radio receivers, transceivers, systems and methods employing wireless digital communications using ultra wide bandwidth (UWB) signaling techniques, and other communication waveforms" (McCorkle, col. 2, ll. 3-6).

Figure 2 of McCorkle is reproduced below.

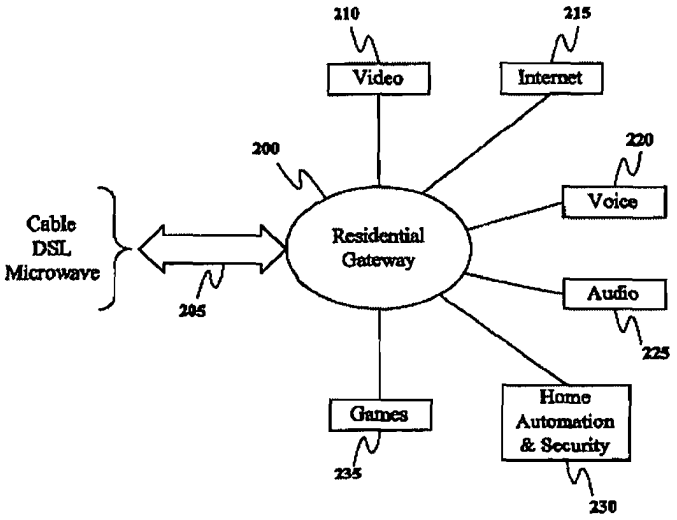

Fig. 2

Figure 2 is a block diagram showing how a transceiver employing a UWB transceiver according to a preferred embodiment can facilitate wireless communications between different appliances and external communication networks by way of a residential gateway (*id.*, col. 6, ll. 48-52).

Figure 2 shows a residential gateway 200 serving as a UWB communications hub for various electronic devices, including digital video devices 210, Internet-enabled appliances 215, voice transmission devices 220, audio transmission devices 225, home automation and security devices 230, and games 235 (*id.*, col. 7, ll. 30-35 and 48-53). The residential gateway can be used to coordinate the actions of an electronic device with a remote source (not shown) over a carrier 205, such as a cable provider, digital subscriber line, or microwave link (*id.*, col. 7, ll. 42-47). For example,

the residential gateway can be used to (a) receive data from an electronic device and send it to a remote source over carrier 205 and/or (b) receive data from a remote source via carrier 205 and send it to an electronic device (*id.*, col. 7, l. 5 to col. 8, l. 36).

The residential gateway as well as each electronic device contains a UWB transceiver, also referred to as a UWB radio (col. 7, ll. 30-33 and 48-53).

Figure 3 of McCorkle is reproduced below.

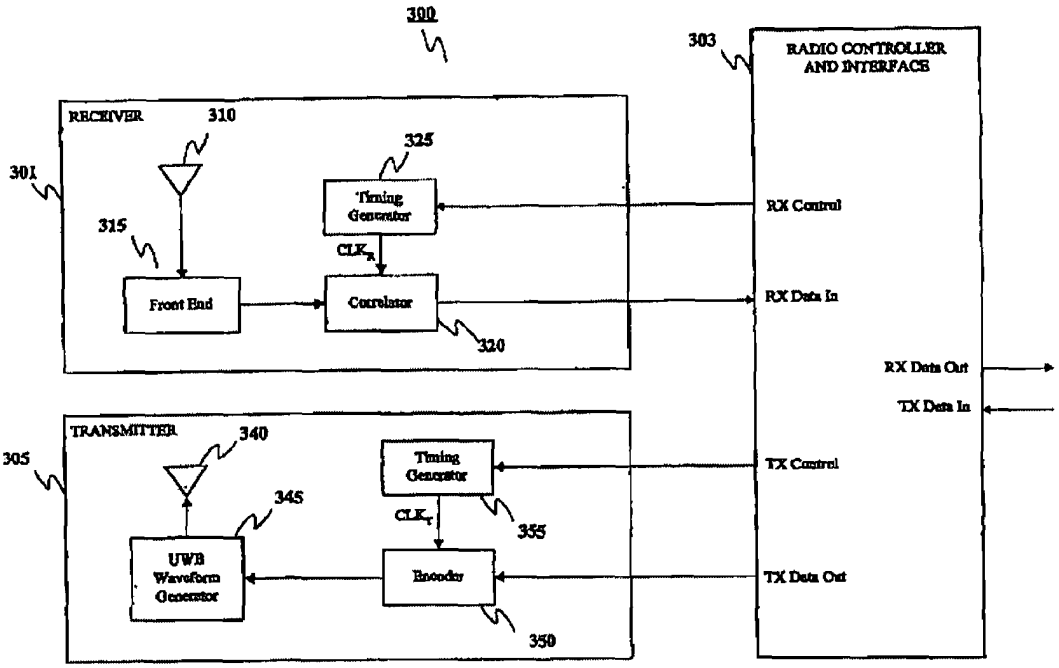

Fig. 3

Figure 3 is a block diagram of a preferred embodiment of the UWB radio (*id.*, col. 6, ll. 53-54).

As shown in Figure 3, UWB radio 300 consists of a receiver 301 for receiving externally generated UWB signals (*id.*, col. 8, ll. 54-56), a transmitter 305 for transmitting UWB signals to an external receiver (*id.*, col. 10, ll. 44-47), and a radio controller and interface 303 ("interface 303"). Receiver 301 can be used to recover UWB data from the received UWB signal and provide it as an output of a correlator 320 (*id.*, col. 9, ll. 22-23),which is connected to the "RX Data In" of interface 303. UWB data for transmission by transmitter 302 is coupled to the input of encoder 350 (*id.*, col. 9, ll. 60-62), which is connected to the "TX Data Out" line of interface 303. Interface 303 couples the data received by receiver 301 to a "data out" line (*id.*, col. 9, ll. 52-55), labeled "RX Data Out" in Figure 3, and receives data for transmission from an external source (*id.*, col. 9, ll. 60-62), presumably via the "TX Data In" line in Figure 3.

In the UWB radio that is located in residential gateway 200, the "TX Data In" and "RX Data Out" lines of interface 303 presumably will be coupled to carrier 205 (Fig. 2), which as already noted can be a cable provider, digital subscriber line, or microwave link (*id.*, col. 7, ll. 42-47). McCorkle does not explain how the data received from a remote source via carrier 205 is recovered from the carrier. However, in the case where carrier 205 is a microwave carrier, the artisan would have understood that the data is necessarily in the form of modulations of a continuous sine wave microwave carrier, from which the data must be recovered by using a suitable microwave

receiver and demodulator. Claim 1 is therefore inherently anticipated by McCorkle.

Alternatively, it would have been obvious in view of the repeater apparatus shown in Fischer's Figure 2 (particularly antennas 124a-f, receivers 130a-f, and QPSK demodulators 132a-f) that the data received from a remote source via McCorkle's carrier 205 can take the form of modulations of a continuous sine wave carrier signal and can be recovered therefrom by a microwave antenna, receiver, and demodulator.

We leave it to the Examiner to determine in the first instance whether the remaining claims are anticipated by McCorkle and/or would have been obvious over McCorkle considered with Fischer or other prior art.

APPELLANTS' OPTIONS FOR RESPONDING TOTHE NEW GROUND OF REJECTION

Regarding the new ground of rejection pursuant to 37 C.F.R. § 41.50(b), that paragraph explains that "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

Appellants, within two months from the date of this decision, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the Examiner, in which event the proceeding will be remanded to the Examiner. . . .

> (2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

37 C.F.R. § 41.50(b) (2007).

REVERSED; 37 C.F.R. § 41.50(b)

rvb

PULSE-LINK, INC.
1969 KELLOGG AVENUE
CARLSBAD, CA 92008

Enclosure: Form PTO-892 listing McCorkle U.S. Patent 7,177,341 B2.

Notice of References Cited	Application/Control No. 10/719,903	Applicant(s)/Patent Under Reexamination of a Patent Appeal No. 2008-1413	
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U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US7,177,341	02/2007	McCorkle	
	B				
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.